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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/700,323	09/27/2001	Takashi Niwa	S004-4139-PCT	4841

7590

12/18/2003

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EXAMINER

JACKSON, ANDRE K

ART UNIT

PAPER NUMBER

2856

DATE MAILED: 12/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/700,323

Applicant(s)

NIWA ET AL.

Examiner

André K. Jackson

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3,4,24-35,37,38 and 40 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,24-35,37,38 and 40 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,24-26 and 34 are rejected under 35 U.S.C. 102(b) as being anticipated by Takeuchi.

Regarding claim 1, Takeuchi et al. disclose in "Electro-optically controlled measurement probe system" an optical waveguide (Figures 25-26), a tip formed on the first side at the free end (Figures 25-26) and a reflecting member forming part of the reflecting film at the free end of the waveguide (Column 17); the reflecting member having a generally planar surface for reflecting light propagated from the light input/output end of the waveguide for guiding the reflected light towards the microscopic aperture of the tip (Figures 25-26); a reflecting film disposed on the second side of the optical waveguide (Figures 25-26).

Regarding claim 24, Takeuchi et al. disclose where the reflecting member is a mirror (Figures 25-26).

Regarding claim 25, Takeuchi et al. disclose where the entire mirror is generally planar (Figure 25-26).

Regarding claim 26, Takeuchi et al. disclose where the entire mirror is generally planar (Figure 25-26).

Regarding claim 34, Takeuchi et al. disclose an optical waveguide (Figures 25-26), a tip formed at the free end (Figures 25-26), the tip having a microscopic aperture (Figures 25-26) and a reflecting member forming part of the reflecting film at the free end of the waveguide (Column 17) having a generally planar surface for reflecting light propagated by the optical waveguide and for guiding the reflected light towards the microscopic aperture to generate near-field light at the microscopic aperture (Figures 25-26); a reflecting film disposed on the second side of the optical waveguide (Figures 25-26).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1,3,4 and 24-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Muramatsu et al.

Regarding claim 1, Muramatsu et al. disclose an "Optical waveguide probe and optical system" that has an optical waveguide (Figure 1), a tip formed on the first side at the free end (Figure 1) and the reflecting member having a generally planar surface for reflecting light propagated from the light input/output end of the waveguide for guiding the reflected light towards the microscopic aperture of the tip (Figure 2f, 30); a reflecting film disposed on the second side of the optical waveguide (Column 6, Figures 9a-b). Muramatsu does not explicitly show a reflecting member forming part of the reflecting film at the free end of the waveguide. However, in Column 6 and Figures 9a-b Muramatsu et al. disclose forming part of the reflecting film with a generally planar surface. It would be certainly within the purview of the artisan to combine the two embodiments in order to get a device which can direct light through the tip (Figure 2) made as part of the reflecting layer (Figure 9) since this would improve the measurement capability in the microscope.

Regarding claim 3, Muramatsu et al. disclose where part of the optical waveguide comprises a core (3), and cladding (4) disposed the core (Figure 1).

Regarding claim 4, Muramatsu et al. disclose having a light blocking film (26) disposed on the first side of the optical waveguide (Figure 8d).

Regarding claim 24, Muramatsu et al. disclose where the reflecting member is a mirror (Column 4).

Regarding claim 25, Muramatsu et al. disclose where the entire mirror is generally planar (Figure 2f).

Regarding claim 26, Muramatsu et al. disclose where the entire mirror is generally planar (Figure 2f).

Regarding claim 27, Muramatsu et al. disclose where a light blocking film (26) is disposed on the first side of the optical waveguide (Figure 8d).

Regarding claim 28, Muramatsu et al. disclose where the cladding surrounds the core (Figure 1).

Regarding claim 29, Muramatsu et al. disclose a light blocking film (26) disposed on the first side of the optical waveguide (Figure 8d).

Regarding claim 30, Muramatsu et al. disclose where the core has two sides and the cladding is disposed on one of the two sides of the core (Figure 1).

Regarding claim 31, Muramatsu et al. disclose a light blocking film (26) disposed on the first side of the optical waveguide (Figure 8d).

Regarding claim 32, Muramatsu et al. disclose where the core has two sides and the cladding is disposed on the two sides of the core (Figure 1).

Regarding claim 33, Muramatsu et al. disclose a light blocking film (26) disposed on the first side of the optical waveguide (Figure 8d).

Regarding claim 34, Muramatsu et al. disclose an optical waveguide (Figure 1), a tip formed at the free end (Figure 1), the tip having a microscopic aperture (Figure 1) and having a generally planar surface for reflecting light propagated by the optical waveguide and for guiding the reflected light towards the microscopic aperture to generate near-field light at the microscopic aperture (Figure 2f, 30); a reflecting film disposed on the second side of the optical waveguide (Column 6, Figures 9a-b). Muramatsu does not explicitly show a reflecting member forming part of the reflecting film at the free end of the waveguide. However, in Column 6 and Figures 9a-b Muramatsu et al. disclose forming part of the reflecting film with a generally planar surface. It would be certainly within the purview of the artisan to combine the two embodiments in order to get a device which can direct light through the tip (Figure 2) made as part of the reflecting layer (Figure 9) since this would improve the measurement capability in the microscope.

Regarding claim 35, Muramatsu et al. disclose a light blocking film (26) disposed on the first side of the optical waveguide (Figure 8d).

Regarding claim 37, Muramatsu et al. disclose an optical waveguide with a longitudinal axis, a first section extending in a direction generally parallel to the longitudinal axis, and a second section extending from the first section relative to the longitudinal axis so that the light reflected by the reflecting member is guided towards the microscopic aperture to generate near field light at the microscopic aperture. Muramatsu et al. does not disclose an angle. However, there has to be a pre-selected angle in order to have the light propagate correctly through the aperture.

Regarding claim 40, Muramatsu et al. disclose an optical waveguide (Figure 1), a tip formed at the free end (Figure 1) with a microscopic aperture (Figure 2f, 30) and a reflecting film disposed on at least a portion of the waveguide, the reflecting member forming part of the reflecting film having a generally planar surface disposed proximate the free end of the waveguide (Figure 8d) relative to the longitudinal axis for reflecting light propagated by the waveguide and for guiding the reflected light towards the microscopic aperture to generate near field light at the microscopic aperture; a reflecting film disposed on the second side of the optical waveguide (Column 6, Figures 9a-b). Muramatsu et al. does not disclose an angle. However,



there has to be a pre-selected angle in order to have the light propagate correctly through the aperture.

5. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Muramatsu et al. in view of Niwa.

Regarding claim 38, Muramatsu et al. disclose a reflecting member disposed on the second section of the waveguide. What is not disclosed is a reflecting film disposed on the first section of the waveguide. However, Niwa discloses a reflecting film disposed on the first section of the waveguide. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify Muramatsu et al. to include a reflecting film disposed on the first section of the waveguide since they are from the same field of endeavor.

6. Claim 40 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi et al.

Regarding claim 40, Takeuchi et al. disclose an optical waveguide (Figures 25-26), a tip formed at the free end (Figures 25-26) with a microscopic aperture (Figures 25-26) and a reflecting film disposed on at least a portion of the waveguide; the reflecting member forming part of the reflecting film having a generally planar surface disposed proximate the free end of the waveguide (Figures 25-26, Column 17) relative to the longitudinal axis for reflecting light

Art Unit: 2856


propagated by the waveguide and for guiding the reflected light towards the microscopic aperture to generate near field light at the microscopic aperture a reflecting film disposed on the second side of the optical waveguide (Figures 25-26). Takeuchi et al. does not disclose an angle. However, there has to be a pre-selected angle in order to have the light propagate correctly through the aperture.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to André K. Jackson whose telephone number is (703) 305-1522. The examiner can normally be reached on Mon.-Thurs. 7AM-4PM.

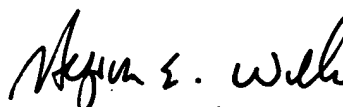
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (703) 305-4705. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

A.J.



December 12, 2003



HEZRON WILLIAMS  
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